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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/775,596	02/05/2001	David Mottier	202780US2	9258

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EXAMINER
ABRAHAM, ESAW T

ART UNIT	PAPER NUMBER
2133	8

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PRE

Office Action Summary	Application No. 09/775,596	Applicant(s) MOTTIER ET AL.
	Examiner Esaw T Abraham	Art Unit 2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3 and 6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims **1 to 9** are presented for examination.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No: 0002579 filed on 02/02/00.

Information Disclosure Statement

3. The references listed in the information disclosure statement submitted on 05/07/01 and 02/13/02 have been considered by the examiner (see attached PTO-1449).

a) English translation for the IDS is required when the applicant is responding to the office action.

Drawing

4. The drawings are objected to under 37 CFR 1.83(a) because the components or steps of the drawings are not labeled as described in the specification A proposed drawing correction or corrected drawings to describe or designate with or as if with a label for every component or step are required in reply to the Office action to avoid abandonment of the application.

Specification

5. The **abstract** of the disclosure is objected to because the abstract include numbers in the disclosure of the abstract.

Remove: a) The title of the application "Digital transmission method of the error-correcting coding type" which is typed next to the word "ABSTRACT".

b) The numbers "2" and "3" from the content of the abstract in order to avoid complications.

c) "Fig 1." which is included at the end of the abstract.

Correction is required. See MPEP § 608.01(b).

Claim objections

6. The claims **1-9** are objected to because the lines are crowded too closely together, making reading and entry of amendments difficult. Substitute claims with lines one and one-half or double spaced on good quality paper are required. See 37 CFR 1.52(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims **1-9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross (U.S. PN: 5,983,384) in view of Doetsch et al. (U.S. PN: 6,571,366).

As per claim **1,** Ross substantially teach digital transmission method of error correcting type comprising turbo encoding source information using a parallel concatenation of first and second convolutional codes (col. 1, lines 8-14) whereby the turbo-encoding comprising first and second encoding steps, puncturing the first and second groups of code bits and storing in memory, turbo decoding the data samples corresponding to the first and second groups of code bits in at least two decoding stages and determining whether the transmitted code bits have been received in error (see claim 1). Ross further, teach the method of turbo-coding comprising the step of puncturing for deleting code bits according to a predetermined puncturing pattern, the step of de-puncturing function for inserting neutral values for the punctured bits (see claim 2). Furthermore, Ross teach the method of turbo-coding comprising the step of determining whether the code bit have been received in error comprises a CRC check code (see col. 3, lines 21-33 and claim 5). Ross **did not explicitly** teach a puncturing scheme step according to one parameter characteristic of transmission conditions. **However**, Doetsch et al. in an analogous art teach a

digital transmission system and method for channel coding in a turbo coder at a transmitter end, utilizing a punctured turbo code with a variable (parameter) coding rate, wherein said coding rate is chosen as a function of a Quality of Service (QoS) (characteristic of transmission conditions) of a transmission channel which is one of the transmission channels, turbo decoding in a turbo decoder at a receiver end, requesting coded packets incorrectly sent by the receiver via a return channel, transmitting a portion of information suppressed by a puncturing of turbo code in a previous transmission (see col. 2, lines 49-60). **Therefore,** it would have been obvious to a person having an ordinary skill in the art at the time the invention was made to include a parameter characteristics such as a quality of service of a transmission service as taught by Doetsch et al. for improving the quality of transmission. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because applying puncturing steps according to transmission characteristics would improve the performance of the system and heighten the decoding efficiency.

As per claim **2,** Ross in view of Doetsch et al. teach all the subject matter claimed in claim 1 including Doetsch et al. teach parameter characteristics of the transmission conditions such as QoS (quality of service), BER (bit error rate) and FER (frame error rate) (see col. 3 and col. 7 last paragraph).

As per claim **3,** Ross in view of Doetsch et al. teach all the subject matter claimed in claim 1 including Ross teach packet error detection mechanism (CRC) determines whether the data was received correctly and if a transmission error is detected, maintaining data samples corresponding to the first and second groups of non-punctured code bits in memory and transmitting at least a predetermined portion of the stored punctured code bits to the receiver,

and then turbo-decoding in at least two stages by combining the data samples corresponding to the first and second groups of non-punctured code bits with data samples corresponding to the transmitted punctured code bits (see col. 3, lines 22-33 and claim 1).

As per claim **4,** Ross in view of Doetsch et al. teach all the subject matter claimed in claims 1 and 3 including Rose teach a transmission method applied a coding scheme of turbo coding or parallel concatenated convolutional coding (see col. 1, lines 8-15).

As per claims **5-7,** Ross in view of Doetsch et al. teach all the subject matter claimed in claims 1 and 3 including Rose teach a transmission method applied a coding scheme of turbo coding or parallel concatenated convolutional coding (see col. 1, lines 8-15) and an interleaving means (see fig. 1, element 18).

As per claims **8 and 9,** Ross in view of Doetsch et al. teach all the subject matter claimed in claims 1 and 3 including Ross teach the step of turbo decoding comprising a de-puncturing function for inserting neutral values for the punctured bits (see claim 2). Ross further, teaches in the first stage of turbo decoding, data selector chooses A when the information has been punctured and chooses B when received data samples are available (see figure 3 and col. 3, lines 6-20).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US PN: 6,101,626 Morelos-Zaragonza et al.

US PN: 6,289,486 Lee et al.

US PN: 6,272,183 Berens et al.

US PN: 6,166,667 Park

9. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

Esaw Abraham

Art unit: 2133

ALBERT DECADY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100